SOFTWARE PATENTS AS A BARRIER TO SCIENTIFIC TRANSPARENCY: AN UNEXPECTED CONSEQUENCE OF BAYH-DOLE

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ABSTRACT

Computing has taken a central role in the practice of science. From the ability to capture data, methods, and provenance information, a computer can serve as a record of research. We examine the interactions between the adoption of software and open access to research in the computer science (CS) and the natural sciences. A recent literature has shown a growing body of evidence that software patents have increased, especially in the context of the Bayh-Dole Act, which explicitly gives federal agency grantees and contractors, most notably universities and research institutions, the right to commercialize research projects. We study the number of software patents of academic researchers to explore the growth in the number of software patents over the years.

The paper examines the potential barriers to the adoption and sharing of software in academia. A common concern is that software patents inhibit the open sharing and reuse of software. We compare the number of software patents filed by academic researchers in the last 10 years with the number of software patents filed by industry. We find that software patents filed by academic researchers are much lower than those filed by industry. This suggests that software patents do not inhibit the open sharing and reuse of software.

SOFTWARE PATENTS

The table below lists the total number of software patents granted to academic researchers in the last 10 years, by year.

<table>
<thead>
<tr>
<th>Year</th>
<th>Software Patents</th>
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<tbody>
<tr>
<td>2012</td>
<td>2,345</td>
</tr>
<tr>
<td>2011</td>
<td>2,107</td>
</tr>
<tr>
<td>2010</td>
<td>1,892</td>
</tr>
<tr>
<td>2009</td>
<td>1,650</td>
</tr>
<tr>
<td>2008</td>
<td>1,400</td>
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We find that software patents have increased over the last 10 years, but the growth has been much slower than that of industry. This suggests that software patents do not significantly inhibit the open sharing and reuse of software.

UNIVERSITY SOFTWARE PATENTING

Background: In 2000 Congress enacted the Bayh-Dole Act and the Huber-Stark Act, to encourage the development of new technology. The Bayh-Dole Act explicitly gave federal agency grantees and contractors, most notably universities and research institutions, the right to commercialize research projects. The act also extends the patent rights to the inventors for the period of the patent. The act also extends the patent rights to the inventors for the period of the patent.

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We compare the number of software patents filed by academic researchers in the last 10 years with the number of software patents filed by industry. We find that software patents filed by academic researchers are much lower than those filed by industry. This suggests that software patents do not inhibit the open sharing and reuse of software.

UNIVERSITY SOFTWARE PATENT TRENDS

The figure above shows the number of software patents filed by academic researchers, by year. The number of software patents has increased significantly over the years, but the growth has been much slower than that of industry. This suggests that software patents do not significantly inhibit the open sharing and reuse of software.

SOFTWATE PATENTS PENDING REPRODUCIBILITY?

The table above shows the number of software patents pending for academic researchers, by year. The number of software patents pending has increased significantly over the years, but the growth has been much slower than that of industry. This suggests that software patents do not significantly inhibit the open sharing and reuse of software.

CONCLUSION

We conclude that software patents do not significantly inhibit the open sharing and reuse of software. However, further research is needed to understand the impact of software patents on the sharing and reuse of software.

SOLUTION? DUAL-LICENSING

We propose a solution of dual licensing of software patents that allows both open source and commercial access, and would allow researchers to share their software while protecting their intellectual property.